

SCIENTIFIC TOPICS

CURRENT NOTES OF DISCOVERY AND INVENTION.

What the White Man's Burden Really Means—Cab Taximeters Among the Latest Inventions—Shaving by Machinery.

The "White Man's Burden."

The London Times says: In an interesting statistical article in the American Review of Reviews, Dr. Dorchester endeavors to set forth in square miles and population the dimensions of the burden of the White Man. His article may be recommended to those who assume that this burden is of recent growth, and can be prevented from increasing. Estimated in area, it had already in 1800 reached the fair total of 6,266,881 square miles. In the next eighty years 8,826,632 square miles were added to the possessions of the seven great colonial powers. Since 1880, Germany and the United States have become the possessors of colonies. It is a significant fact, that of the six powers which are still acquiring colonies, four should have possessed extended colonial possessions at the beginning of the present century. Dr. Dorchester points out that of the 52,000,000 square miles of the whole world, 22,288,152 are held in a colonial or protectorate form, and that all this territory has been acquired by Christian governments since 1500, and the greater part since 1600. Expressed statistically, the "White Man's Burden" may be put down at 22,288,152 square miles, or 42 per cent of the total area of the earth's surface, and 447,296,859 inhabitants, or 33 per cent of its population.

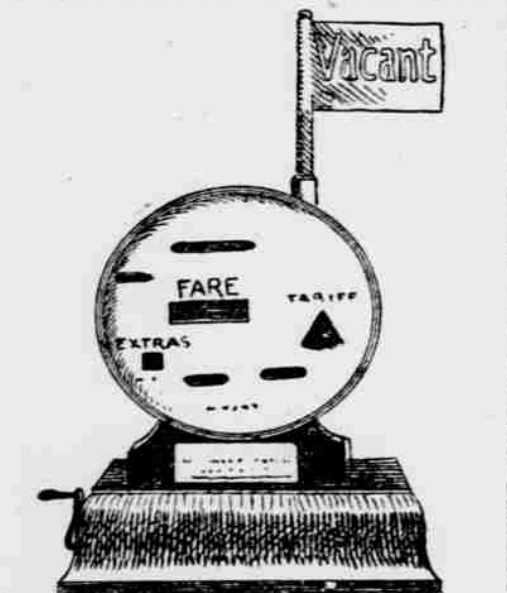
Within the last eighteen years 8,670,120 square miles have been added to the colonial empires of the great colonizing powers. This total, which does not include Egypt or the Sudan, is made up as follows:

	Square miles.
Great Britain	3,987,312
France	2,936,563
Germany	1,020,070
Russia	265,281
United States	160,601
Netherlands	123,677
Portugal	96,605
Spain	79,911

Even Spain, in spite of the loss of her best colonies, has increased the colonial area she governed in 1880. Denmark alone among the old colonial powers has not added more territory to her over-sea possession during the present century. It is interesting to note that the total colonial area is 7.7 times larger than the total area of the home governments. In the case of Great Britain it is 75 times more than her local home area; in that of France nearly 18, Portugal 22, the Netherlands 65, Germany 5, and Russia 3 times as large as their home area.

Cab "Taximeters."

London has at last risen against the cabby. A machine lately invented will register every circumstance in connection with a ride in a cab, and so universal is the cry for these, and so pointed the manner in which cabs that have them are patronized in preference to cabs that have not, that the owners and managers of the various cab systems are speedily putting them in. The machine, which is known as the taximeter, registers when you get in whether you have a valise or not; directs your attention to the fact that you have ridden a mile by the loud ring on a bell, and at every half mile thereafter. If you wait in front of a store the charge is just the same, as a device under the control of the driver shifts the regulator from the wheel to a clock. On lighting for the last time a spring is touched to show up on a card the amount of your fee. The drivers of the company which put the machines in first wear a distinguishing badge, and are doing all the business. They are well and regularly paid, in consequence of which they are



uniformly polite and obliging. It looks as if London were to get rid of one of her greatest nuisances.

The Latest in Talking Machines.

It has long been the aim of manufacturers of talking machines to increase their loudness without changing the quality of the sounds they reproduce, but hitherto the efforts in this direction have not been altogether successful. Now, however, the problem has to a large extent been solved by Mr. E. Berliner, the well known inventor, who has vastly increased the loudness of the talking machine by the simple device of rotating a number of gramophones from one motor with the records or cylinders so arranged that they all "play" simultaneously. Gramophone records are pressed from dies or matrices, like seals, under heat and pressure, and consequently all records of one catalogue number are

exactly alike in every detail. Hence when a number are played together they sound like only one record, and with a loudness proportionate to their number. Mr. Berliner has named his new invention the multiphone, the experimental machine which he has constructed being a sextuplex multiphone, that is, one in which six records are played simultaneously.

It has long been known that the carrying power of the ordinary gramophone is most astonishing. It fills a hall the size of the Metropolitan Opera House, in New York, and on the water, on a quiet evening, it has been heard over two miles. Multiply these effects by six, and you have the performance of a sextuplex gramophone.

Shaving by Machinery.

What a luxury it would be to shave oneself without doing the shaving! Such an ideal must have seemed with-in the realization to the British of a century and a half ago. Among the specious prospectuses lying on their breakfast table one day they found a document containing "proposals" to fit up a piece of machinery which would shave sixty men in an hour, and comb and powder their wigs into the bargain. Each subscriber to this wholesale shaving machine was to pay a guinea a year, in exchange for which he was to receive a copper ticket, which would secure him as many shaves in a twelvemonth as the most ardent lover of a "clean face" could desire. Then there was to be a new engine set up for every 500 subscribers, the locality of which was to be decided by the first 200 to give in their



names. To inspire confidence in the scheme, there was published the accompanying plates. The process was to be very simple. You merely placed your face against one of the circular plates in the side of the wall, and the razors which whirled rapidly past the narrow openings were warranted to finish off their work in sixty seconds.

Species of Plants Known.

A comparison of the number of species of plants known to the various learned men, who have lived during the past 2,000 years, and whose names are more or less familiar to us, shows, says Prof. F. H. Knowlton in the Plant World, how marvelously our knowledge of plants has been increased. Thus Hippocrates, called the "Father of Medicine," who lived between 500-400 B. C., knew only 234 species or kinds of plants. Theophrastus, 371-285 B. C., who was perhaps the first real botanist whose name has been handed down to us, described about 500 species of plants, which he divided into trees, herbs and shrubs. By Dioscorides (77 A. D.) the number was raised to 600 species, and by Pliny (23-79 A. D.) to 800 species. During the ensuing 1,500 years and more, comparatively little work was accomplished. Ray, who wrote between 1685 and 1704, enumerated and described 18,625 species of plants. The number of plants known to Linnaeus in 1771 was only 8,551 species, less than half the number supposed to have been known to Ray. Persoon in 1807 recognized 20,000 species of flowering plants, while DeCandolle in 1809 recognized 30,000 species. An estimate made about five years ago placed the number of known plants in the world at 173,706, of which the seed plants made up about 125,000. Considering the number of new species published every year, it is probable that the number now in the books is not much short of 200,000 species.

To Save Sinking Ships.

Among the inventions which had a practical trial during the recent Spanish-American war was a French device for stopping shot holes, called the Colomes stopper. One of these was employed to close a rent made by a shell in the United States battleship Iowa. The hole was about a foot above the water line. As soon as the stopper was inserted the inflow of water, which had begun to flood the deck, ceased. The stopper consists of a rod having at one end an iron plate, pivoted at the center so that it can be folded backward along the rod. To stop a leak, the rod carrying the plate is first thrust outward through the hole; then a turn of the rod causes the plate, which is weighted at one end, to become parallel to the side of the ship, and in this position it is drawn back by the rod so as more or less completely to cover the hole. Next a cellulose cushion is placed upon the rod, and by the aid of a nut forced tightly against the inner side of the ship over the hole, so as entirely to stop the leak. Stoppers of various sizes are carried, to suit the size of the hole that may have to be dealt with.

Aluminum Coins.

It is reported that experiments have been carried on at the United States mint in Philadelphia for nearly a year with a view of ascertaining the fitness of aluminum for minor coins. Some ten thousand blanks of the size of the nickel five-cent piece have been delivered at the mint for this purpose. It may be mentioned that congress some time ago appointed a commission of experts to investigate and report upon this subject, and the experiments above referred to are being carried on under the direction of its members.—Journal of the Franklin Institute.



Dairy Notes.

The passage of the Dunlap-Lyons pure food bill by the Illinois legislature gives the consumers and producers of dairy products in Illinois some hope that they will be enabled to get some protection against frauds in the form of adulterations and preservatives. The thing that is now needed is to have a commissioner appointed that will discharge his duties with regard to public interests. The task has become almost herculean by reason of the long years of delay. Illinois has proved a rich territory to be worked in the interests of every manufacturer of so-called preservatives as well as for the manufacturers of spurious butter. Give us men that have the energy and honesty that present circumstances require.

The shipment of butter is almost a science in itself. By reason of too little thought in this regard the shippers of butter frequently suffer considerably. If a man is to send forward a good deal of butter of different qualities it is very necessary for the description of his goods to be such that it will be understood by the commission man to whom they are shipped or by other customers. If it happens that two qualities are in the same batch, the whole is likely to be judged by either the good or the bad. If it is judged by the bad, the price he receives will be low. If it is judged by the good, then the bad butter may spoil a good customer. It is best not to try to deceive the commission man or any customer.

The state of Washington has just put into operation a law that will certainly prove effective if it is properly enforced. It provides for a state brand for both butter and cheese. The cheese is to be labelled Washington Full Cream cheese and can be made only from whole milk and must contain not less than 30 per cent of butter fat. No cheese is to be made containing less than 15 per cent of butter fat. Filled cheese will be suppressed with an iron hand. A uniform butter brand stencil reading "Washington Creamery Butter" is to be issued to the creameries and no butter made outside of the state can have the use of this stencil. One good point about the new law is that it prohibits the buying of oleomargarine by any state institution. This will put a stop to the use of oleo in the poor houses and other institutions of like character. All milk dealers in cities of over 1,000 inhabitants must have licenses. Process butter may be made, but must be marked "Renovated Butter."

Digestibility of Milk.

Feeds do affect the flavor, but flavor and digestibility are different factors, and we have no proof at the present time that milk from a healthy animal fed on clean feed is in any way affected as to its digestibility by any feed or combination of feeds, says Hoard's Dairyman.

The same objection that is made to cotton-seed meal has also been raised against ensilage, but Mr. H. B. Gurley, who is supplying Chicago with a grade of milk especially used by children and invalids, uses silage freely. If care is taken to use feeds that are free from strong flavors, or if high flavored foods are fed after the animals are milked, the milk will have no other than its natural sweet flavor—provided that precautions are taken as to the cleanliness of the animal, stable and vessels holding the milk. That there is a difference in the digestibility of milk from individual cows is well known to every doctor. It frequently happens that several animals have to be tried before one is found whose milk is suited to the stomach of a delicate child. We have not yet, however, arrived at the point where we can say that any clean food, such as cotton-seed meal, or other feeds of like nature, makes the casein of the milk less digestible, and that its use should be discontinued in consequence. At the same time it should be recognized that any food, if given in such quantities as to affect the health of the animal, will in many cases cause the milk to become unfit to use.

Utilizing Skim-Milk.—Skim-milk has heretofore been almost a waste product in many creameries. It has not been utilized to the advantage of either the creameryman or patron. Its value for feeding purposes has been almost entirely destroyed, and the farmer who offered it to his calves or pigs felt almost ashamed of himself to think he would provide such unwholesome, miserable rations for their use. But with better enlightenment on this subject and facilities for doing it in better shape, they are beginning to utilize skim-milk in such a way that many of the farmers now consider it worth from 15 to 20 cents per hundred for feeding purposes alone.—Elgin Dairy Report.

Oleo Prosecutions in Pennsylvania.—The butter trade of Philadelphia has taken up the prosecution of the oleo dealers, and have already secured evidence of the violation of both the state and national law, and propose to push the suits to a conclusion. In the investigation fifty retail dealers have been found selling the stuff without even the formality of a government license. In every case they were selling oleo as butter.—EX.

Whitewash the stable twice a year.

BASE BALL TOPICS

CURRENT NEWS AND NOTES OF THE GAME.

The Pitching Department of the Cincinnati Club—Stories of Some Celebrated Players—Dunn and Shutouts—Diamond Drift.

The Reds' Pitching Corps.

It is a good thing to have pitching talent in reserve; but to attempt to work seven pitchers regularly, that is, give each one a turn, would make pitching days too far apart. A rest of seven days between pitching turns would permit a pitcher to become stale and out of practice. In deciding to work four pitchers regularly and keep three in reserve, Captain Ewing is pursuing a policy that will be indorsed by followers of the game. Pitchers of the calibre of Hawley, Taylor, Breitenstein and Phillips can pitch once every four days and be at their best. Indeed, in the middle of the season, when the weather is warm Phillips can pitch every other day. In fact, he did it for some time in the Western League last year. Phillips made a record in the Western League last season that has probably never been equaled in modern baseball. He pitched from about the middle of June until the middle of September without pitching a losing game.—Cincinnati Enquirer.

A Utility Man.

William H. Keister, Jr., a utility infielder of the Baltimore team of the National League and American Association, is a Baltimorean by birth. He was born in that city August 17, 1874, and is consequently in his twenty-fourth year. He is small of stature, standing 5 feet 5½ inches, and weighs about 168 pounds. He learned to play ball at Hanover, Pa., in 1894, and remained with a local team two seasons, making quite a reputation as a fielder, batter and base runner. His excellent work attracted the attention of Manager Hanlon, as well as several others. On Hanlon's recommendation Keister was engaged by the New Haven club in the spring of 1896, when the latter's team was on a Southern exhibition tour. He remained with the Elm City team until May, having participated in ten championship games, when his release was purchased by Manager Hanlon of the Baltimore team. He remained with the latter until July 17, when he was farmed out to the Scranton club of the Eastern League, where he finished the season, participating in twenty-six championship contests with the latter. At the end of that campaign Manager Hanlon asked him if he would like to go to the Paterson club of the Atlantic league, and he was so well pleased with the idea that a deal was completed whereby he was exchanged for Pitcher Cogan. Keister took part in 132 championship contests with the Paterson team during the season of 1897, and ranked high as a batsman in the official averages of that league, having a percentage of .318. In the fall of that year, while the Boston were playing at Baltimore, Manager Selee of the Boston team, met Keister and had a talk with him, asking him how he would like to play at Boston. That pleased Keister, and he was accordingly drafted from the Paterson Club by Boston. In the spring of 1898 Keister went south with the Boston players for preliminary work, and after they returned north he remained with the team until the latter part of May, when his release was purchased by the Rochester club of the Eastern League. In July the Rochester club came to grief and the players were transferred to Ottawa, Can., and played their first game under the new name on July 13, at Syracuse, N. Y., celebrating the event with a victory. Keister participated in ninety-five championship games that season with the Rochester and Ottawa teams, ranking fourteenth in the



WILLIAM H. KEISTER.

official batting averages of the Eastern league, with a percentage of .322. It is said of him that he enters heart and soul into the game, and hustles from the time the first man goes to the bat in the first inning until the last man is out in the ninth.

Hamilton Is All Right.

Billy Hamilton was advised last fall by Dr. Conant of Boston to have an operation on his knee. When the team played the Senators at Norfolk Hamilton's knee gave out, and he told Manager Selee that he might then take Dr. Conant's advice and have the knee operated on. When the team reached Charlottesville the next day Hamilton was taken to the University of Virginia where Professor Christian and Dr. Hedge took Hamilton in tow and examined his knee. The X-ray was brought into use and the experts assured the feet-footed Boston felder that he was all right and no operation

need be performed. Hamilton was taken to the ball grounds and made run and turn in all kinds of forms, but he failed to throw the cartilage out of place. Manager Selee was much pleased, and as he was an interested spectator, and now says Hamilton will be a better man than ever, knowing that he has no serious trouble to fear from the old accident.

Pitcher Magee.

William Magee, one of the pitchers of the Louisville club, graduated from the Brockton club of the New England league in 1896. He developed gradually during his two seasons with the Colonels and is now regarded by experts as one of the best of the younger class of twirlers. In 1897 he pitched in fourteen games for Louisville, of which he lost ten and won four, his percentage of victories being .286. Last season he showed great improvement, and his record was sixteen victories in thirty games, a percentage of .533. He shut out the Washingtons once and also defeated the Senators in a 4 to 3, 11-inning game, came off victor in a 10-inning pitching duel with Hughes of Baltimore by a score of 1 to 0, defeated the Browns by 3 to 1 in 11 innings and made a draw of 2 to 2 in 11 innings against Pittsburgh and was opposed in a grueling 12-inning contest to Nichols with the champion Boston behind him which resulted in a score of 1 to 1. These were among his notable pitching feats in 1898. Magee started this



WILLIAM MAGEE. season by shutting out the Chicago club, but did not show good form against Cleveland or Pittsburgh.

Dunn and Shutouts.

There seems to be a fatality against Dunn of Brooklyn scoring a shutout. In his entire career in the league since 1896 this pitcher, while doing some very effective work, has never yet sent the opposing team to the sand hill without at least one tally. Sometimes the stipulated nine innings have been played without a tally and even then his own team may have won out, but the twirler says that the other side has never failed to get in at least one chalk mark. In the recent series there were two men out in the ninth and Boston had not scored up to that point. With the bases full, Dunn had two strikes and two balls on Lowe. Instead of making Lowe hit it, however, Dunn tried to strike him out and he walked, forcing a run.

Dope.

The base ball dope fiends of the Western League circuit have prepared a showing on which Buffalo seems to be a cinch winner. They show that the Buffalo team averages .252 in batting and .940 in fielding. The other averages are as follows: Columbus, batting, .270; fielding, .922; Detroit, batting, .253; fielding, .926; Indianapolis, batting, .252; fielding, .925; Kansas City, batting, .248; fielding, .934; Milwaukee, batting, .263; fielding, .906; St. Paul, batting, .270; fielding, .923. Dope figures, however, as applied to baseball, are not certain indications of how the teams will finish the season.

In the Eastern.

Quite a number of Western League players are now with Eastern League teams. Third Baseman Nyce is with Providence, Pitcher Pappalau and Outfielder Hernon are with Springfield; at Syracuse, Whistler, Lohbeck, Mazena and McKinney are found. Hartford has old Phil Kneil and Catcher Boyd, once with Detroit; Frisbee and Richter are at Worcester; Rochester's list includes Campau, Catcher Smink, Burke, O'Hagan and McHale; Montreal has Abbey, Dooley, Sheibeck and Bannon, while at Toronto, Wally Taylor, once a Brewer, is looking after second base.—Detroit Free Press.

Diamond Drift.

"Milwaukee Jack" Taylor has proven in the games he has so far pitched for Chicago he was worth the money he stood out for, Connie Mack notwithstanding.

Harry O'Hagan, the fast fielding first baseman, who was with Kansas City last season, has been signed by Rochester and will not play in Kansas City this summer.

The Baltimore's outfield of Holmes, Brodie and Sheppard is said to be one of the fastest of the league. A New York writer is the judge, so some allowance must be made.

No wonder Business Manager Bancroft did not want to pit the Reds against Indianapolis in the early season. He was afraid to have them shown up.—Indianapolis Sentinel.

Stafford of Milwaukee has a new glove with which he scoops the ball off the ground in great shape. It is like a shovel and enables Stafford to make one-handed catches like George Carey.

The responsibility of the captaincy has had a good effect in quieting Everett. Formerly he flared up at every fancied injustice. Now he puts in his time keeping the other players from protesting.

SUMMER EXCURSIONS

Via Sunset Route.



To College, Texas, Texas Farmers' Congress, tickets on sale July 23 and 24, limited for return until July 20. Rate one fare for round trip.

To Fort Worth, Tex.—Annual meeting, Texas Teachers' association. Tickets on sale June 26th, 27th and 28th; good for return until July 1st. Rate, \$24.70.

To Detroit, Mich. Annual convention Christian Endeavorers. Tickets on sale July 1st and 2nd with return limit of July 15th. Extension of return limit can be made to August 15th. Rate \$52.80 for the round trip.

To Richmond, Va., International Convention B. Y. P. U., tickets on sale July 8th and 9th, good for return to August 3. Extension of limit for return can be secured to August 18. Rate \$55.75 for the round trip.

Seaside Excursions—To Los Angeles, Santa Monica, Santa Barbara, San Diego and other California points. Tickets on sale Thursday of each week, with a return limit of ninety days. Stop-overs allowed at pleasure both going and returning at points west of Coiten. Rate \$40.00 for round trip.

Summer excursion Rates to all the well known Springs, Mountains and Lake resorts of the north, east and south. Tickets will be on sale until September 30th good for return until October 31st. Full information cheerfully given on application.

Fourth of July rates from El Paso west. To points within a distance of 300 miles, a rate of one single fare for the round trip. Tickets on sale July 1st, 2nd and 3rd, good for return to July 5th and were distance is over 300 miles July 6th.

From El Paso east, tickets on sale July 3rd and 4th good for return on July 5th, within a distance of 200 miles at rate of one and one-third fare.

For information as to routes, time and service, and for Pullman and tourist car reservations, call at Southern Pacific City Ticket office, Cor. San Antonio and Oregon Sts.

T. E. HUNT, Com'l Agent.

Santa Fe Excursion List.

Commencing June 1st, the Santa Fe Route will place on sale Summer Tourist tickets to Colorado points. The tickets will be sold daily to and including September 15th, final return limit October 31st. Rates:

El Paso to Denver and return, \$40.00.
El Paso to Colorado Springs and return, \$37.50.
El Paso to Pueblo and return, \$36.00.
Effective June 1, summer tourist tickets will be sold, bearing final limit October 31st.

Detroit	\$ 79 95
Lake Chautauque, New York	82 15
Lookout Mountain, Tenn.	68 55
Mackinaw City, Mich.	84 15
Milwaukee, Wis.	73 10
Niagara Falls	88 05
Norfolk, Va.	88 65
Pittsburg, Pa.	80 70
Quebec	101 85
St. Paul	71 75
Toronto, Ont.	88 05

These tickets are effective to various other points and particulars will be gladly furnished on application.

First annual reunion Roosevelt's Rough Riders, Las Vegas, N. M., June 24th-26th. For this event, the Santa Fe Route will sell tickets June 22nd and 23rd to Las Vegas and return at rate of \$11.60.

June 22nd and 23rd, First Annual Reunion Roosevelt's Rough Riders, Las Vegas, N. M., June 24th to 26th. Tickets will be sold to Las Vegas and return at rate of \$11.60, final limit June 28th.

July 9th and 10th, account International convention Baptist young people's union of America, at Richmond, Va., July 13th to 16th, tickets will be sold at El Paso to Richmond and return at rate of one fare plus \$2.00, \$55.75 limit August 3rd, with privilege of extension until August 15th.

Regular seaside excursion tickets on sale every Friday during June, July and August, El Paso to Los Angeles, Redondo Beach, Santa Monica or San Diego and return at rate of \$40.00, final limit ninety days; stop-overs allowed at pleasure west of San Bernardino.

Cafe Dining Car (Service on Q. & C. Route).

Commencing Sunday, June 11th inst., the train leaving New Orleans via the Queen & Crescent Route at 7:30 p. m. daily for the summer resorts of Tennessee and Virginia, and for Washington, Baltimore, Philadelphia and New York, will take on Cafe Dining Car at Atlanta, Ala., and carry it to Radford, Va., serving meals a la carte.

This car returning will be attached at Radford and run to Atlanta.

The hours are very favorable, and the service will be first class in every particular.

The route of the car via Chattanooga and through the Cumberland and Blude Ridge Mountain region enables the traveler to view some of the most beautiful scenery in the country while enjoying his meals.

The a la carte plan of dining car enables the passenger to almost procure any sort of meal that suits his fancy, from a cup of coffee and a roll to an elaborate spread, paying only for what he orders.

This feature of the Queen & Crescent service will, no doubt, be fully appreciated by the travelling public, and that it will receive very liberal patronage cannot be doubted.

The through trains of the V. S. & P. and A. & V. R. R. from Shreveport, Monroe, Vicksburg, Jackson, etc., making connection at Meridian with the train carrying this Dining Car, and passengers from these places will be equally benefited by this service.

Yours truly,
GEO. H. SMITH, G. P. A.

El Paso Dairy company. Telephone 156.